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Case report: GNRH treatment for hypersexual behaviour in a child with autism spectrum disorder

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ABSTRACT

Inappropriate sexual behaviours observed in autism spectrum disorder (ASD) are difficult for both the family and the child, and they can significantly deteriorate social adaptation and functionality. Therefore, these behaviours need to be addressed and treated appropriately. Conventional treatments may be inadequate in a number of cases. In this case report, the treatment of inappropriate sexual behaviours using gonadotropin-releasing hormone (GnRH), despite the medical and behavioural treatment of a 13-year-old boy diagnosed with ASD with mental retardation comorbidity, is described. The use of hormonal therapy in inappropriate sexual behaviours is discussed.

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Autistic disorder; therapy; puberty; gonadotropin-releasing hormone; sexuality; sexual behaviour

Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by continuing social communication and interaction impairment, and limited, repetitive behaviours or interests that occur in the early developmental period of life [1]. This disorder, which is observed to occur in males approximately 4 times more than in females, is considered to affect 1 out of every 100 children [2].

Although it has been previously proposed that children with ASD are sexually immature, unaware of sexuality, and not interested in sexuality [3,4], findings from recent studies show that the sexuality of these children is clinically similar to that of their peers who are not affected by ASD [5,6]. Seventy-five percent of children with ASD exhibit various sexual behaviours [4]. Behaviours such as touching intimate areas, taking off clothes in public, masturbation, and looking at other people's intimate areas can be seen in children with autism.

Despite the increased number of studies on the treatment of autism-related behavioural problems in recent years, it is noteworthy that studies on inappropriate sexual behaviours observed in these children are limited. Additionally, there is no consensus on medical agents that can be used for inappropriate sexual behaviours. There are studies on the use of behavioural-educational approaches [7] and gonadotropin-releasing hormone (GnRH) [8] with an injectable form, such as leuprorelin, which, in some case reports, has been reported to be effective in the treatment of inappropriate sexual behaviours. It is important to note that using GnRH

analogues has several risks, such as delays in pubertal development, and decreased muscle mass and bone density. Therefore, the use of these agents in clinical practice is limited.

In this case, the use and effectiveness of the GnRH analogue were assessed in the patient with an ASD diagnosis and with sexual behaviours that could not be suppressed despite antipsychotic and other agents.

Case presentation

A 13-year-old male was brought to a child psychiatrist because of his inappropriate sexual behaviours (touching the intimate areas of his mother and inappropriately touching his 7-year-old sister and others). In the psychiatric evaluation, the presence of social deficits, mutual interaction and communication impairment, limited interests, and repetitive behaviours was determined, and the child was diagnosed with ASD. The intention was to apply the Wechsler Intelligence Scale for Children-Revised intelligence test, but the child could not cooperate. According to the clinical opinion of the clinician and psychologist, the presence of moderate mental retardation was determined. According to the mother, the behaviours had started in the last 4–5 months and showed a tendency to increase. The mother also stated that the child would get an erection during inappropriate sexual behaviours. She was especially worried about her 7-year-old daughter. During the 7-month follow-up of the case, there was no decrease in the inappropriate sexual behaviours, despite the behavioural therapy and medical agents.

In the child neurology consultation, no pathology was detected in evaluation and electroencephalogram. There was no finding suggesting another psychiatric disorder. Because of the continuation of the inappropriate sexual behaviours, the family was informed, and a paediatric endocrinology consultation was requested for a hormonal treatment option. In the endocrinologist's physical examination of the child, no significant finding was determined. In the wrist graph, the bone age matched with his age. The testosterone level in blood tests was 161.5 ng/dl. A Fragile X diagnosis was excluded in the genetic analysis performed. There was no finding suggesting a physical illness.

As a result of the evaluation, it was concluded that GnRH analogue treatment might be an option, based on the opinions of a child psychiatrist, a paediatric endocrinologist, and a psychologist. When we look from an ethical perspective, it is clear that GnRH treatment is an off-label. But the point that we need to keep in mind is in a paediatric population sample almost half the prescriptions are unlicensed or off-label [9]. Furthermore, the most important reason to choose this agent is there were no more psychiatric agents to decrease these behaviour. We informed the family about uncertainties and potential cost associated with off-label prescribing and the family also was informed about the effects and side effects of this treatment, and written consent was obtained. Three doses of 3.75 mg leuproreotide acetate were administered intramuscularly to the child once every 28 days. During this period, no changes were made in the medical agents. Following the second dose, a slight reduction was noted in his sexual behaviours, and there was a significant reduction in his behaviours following the third dose. Considering the decrease in the sexual behaviours of the child, the plan was to continue the GnRH analogue. In addition, it was observed that there was a decrease in the child's aggressive behaviours following the third dose, even though no change was made in the medical agents. We have assessed the child's behavioural changes as being a result of the observation of family and clinical assessment by the child psychiatrist and psychologist.

Discussion

Although there is no consensus on the frequency and treatment of inappropriate sexual behaviours, this situation is considered to be a disturbing condition for the family, school, and peers, and should be treated. Despite the lack of evidence-based studies in the literature on the use of hormonal treatment, the major reason for using the GnRH analogue was that the inappropriate sexual behaviours observed in our case continued intensely and that this situation posed a significant risk, especially for the child's sister.

It was stated that leuproreotide reduced inappropriate behaviours in an adult male autistic patient and

enabled him to continue living in society [8]. Similarly, there has been a decrease in the inappropriate sexual behaviours and aggressive behaviours of our case. This situation has increased the quality of life of both the child and his family, allowing him to spend more time in society. The fact that testosterone levels in our case were not very high at first (testosterone level compatible with moderate puberty), but that he benefited from GnRH treatment suggests that there may be a difference associated with the sensitivity of testosterone at the receptor level.

Suppressing puberty in a growing child may seem like interfering with some other natural processes. It is known that testosterone accelerates pubertal growth and increases muscle mass and bone density. Long-term hypogonadism increases the risk of osteoporosis [10]. Therefore, we plan to check the vitamin D level in our case at regular intervals and make replacements if necessary.

Although there has been a decrease in the hypersexual behaviour of the child following hormonal treatment, there is not enough information about the duration of this treatment in the literature. Furthermore, this case does not provide sufficient data to say that it can be effective in all children. However, the present case is very significant in that it is the first case report carried out using the GnRH analogue in a child diagnosed with ASD. Further research is needed on the treatment of inappropriate sexual behaviours observed in autism.

Disclosure statement

No potential conflict of interest was reported by the authors.

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